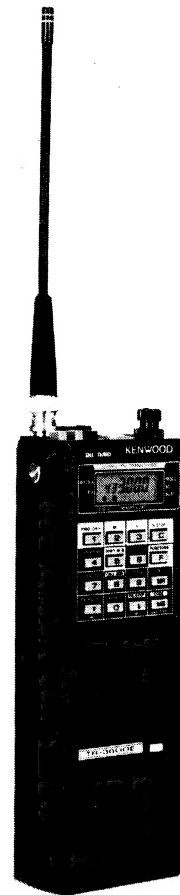


KENWOOD

TR-3600E

430MHz FM SYNTHESIZED HAND-HELD TRANSCEIVER

INSTRUCTION MANUAL



INTRODUCTION

Thank you for purchasing the new TR-3600E Transceiver. Please read this instruction manual carefully before placing your transceiver in service. This unit has been carefully engineered and manufactured to rigid quality standards, and should give you satisfactory and dependable operation for many years.

AFTER UNPACKING;

Save the box and packing material in the event your unit needs to be transported for remote operation, maintenance, or service.

The following explicit definitions apply in this manual:

NOTE: If disregarded, inconvenience only, no risk of equipment damage or personal injury.

CAUTION: Equipment damage may occur, but not personal injury.

CAUTION: DO NOT CONNECT AN EXTERNAL DC SUPPLY DIRECTLY TO THE CHARGE TERMINAL. Use only the supplied charger unit, optional base stand ST-2, or mobile stand MS-1. Extensive damage will occur if this is disregarded.

CAUTION: DO NOT ATTEMPT TO MODIFY OR OTHERWISE TOUCH CMOS LSI CIRCUITS. Leave all service to a qualified, experienced technician.

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SPECIFICATIONS

[GENERAL]

Frequency Range430 — 440 MHz
Memory Channels10 CH
ModeFM (F3), (F2 in DCS mode)
Operating voltage8.4 V DC $\pm 25\%$
Power Requirement8.4 V, 450 mA (Ni-Cd battery pack)
9 V manganese or alkaline (not Ni-Cd)
6 "C" CELL battery case (option)
Back-up Power Requirement ...CR-2032 Lithium battery
Current DrainApprox. 35mA in receive mode with no input signal
Less than 750mA in HI transmit mode (at 8.4 V)
Less than 400 mA in Low transmit mode (at 8.4 V)
Less than 1 μ A for memory back-up
GroundingNegative
Operating Temperature– 20°C to + 50°C
Antenna Impedance50 Ω
Dimensions.....With Ni-Cd battery:
66W \times 168H \times 40D mm
With manganese battery:
66W \times 176H \times 40D mm
WeightWith Ni-Cd battery: 540 g (1.2 lbs.)
With manganese battery: 530 g (1.2 lbs.)

[TRANSMITTER]

RF Output PowerHI = 1.5 W
LOW = 0.3 W approx.
ModulationVariable reactance direct shift
Frequency ToleranceLess than $\pm 20 \times 10^{-6}$
(– 10°C ~ + 50°C)

Maximum Frequency

Deviation ± 5 kHz
Spurious RadiationLess than – 60 dB

[RECEIVER]

Circuitry.....Double conversion superheterodyne
Intermediate Frequency.....1st IF = 21.6 MHz
2nd IF = 455 kHz
SensitivityBetter than 1 μ V for S/N 30 dB
Less than 0.25 μ V for 12 dB SINAD
Pass-Band WidthMore than 12 kHz (– 6 dB)
SelectivityLess than 24 kHz (– 40 dB)
Spurious ResponseBetter than 50 dB
Squelch SensitivityLess than 0.25 μ V (threshold)
Audio Output PowerMore than 400 mW (at 10% distortion and 8 Ω load)

NOTE: Circuit and ratings may change without notice due to advances in technology.

Section 1 PREPARATION FOR USE

ACCESSORIES

Carefully unpack your TR-3600E transceiver and check that it is supplied with the following accessories:

Accessory	Part Numbers
Rubber Flex Antenna	T90-0345-05
Mn Battery Case	
MIC-SP Cover	F07-0855-04
Hand Strap Ass'y	J69-0308-04

BATTERY NOTE

1. Batteries

Load 6 SUM-3 manganese or alkaline batteries in series in the supplied battery case. (We recommend use of high-performance manganese batteries.)

Note: Be sure to observe the polarities.

2. Battery case setting

Align the battery case groove with the TR-3600E and slide it to the right. To remove the battery case, press the release button and slide it out to the left.

3. Operation time

The right-hand figure shows the operation time vs battery voltage at 1 minute transmission and 3 minute reception. This graph shows the transmission at HI position (1.5 W). To communicate with a place nearby, set to LOW position (approx. 0.3 W) to conserve battery power and thus extend operation time.

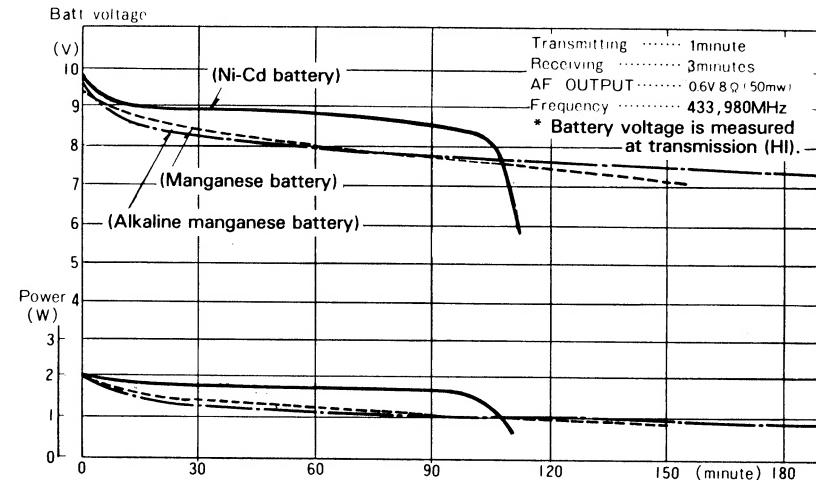


Fig. 1-1 Operating time

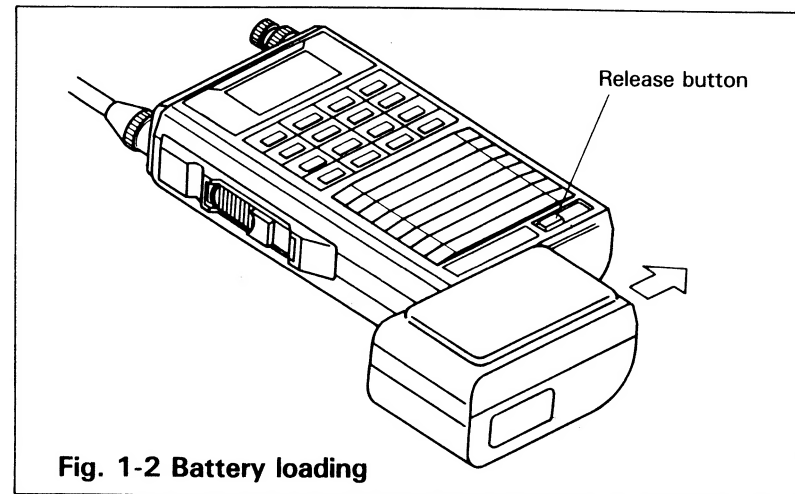


Fig. 1-2 Battery loading

4. Battery voltage check

When the batteries are exhausted and the voltage decreases to the specified value, the BATT indicator indicates the red zone. Recharge or replace the battery.

5. Ni-Cd battery PB-26

A rechargeable Ni-Cd battery PB-26 is available for TR-3600E.

This battery is convenient for mobile operation.

To recharge the PB-26, use the optional charger BC-2, mobile stand MS-1 or base stand ST-2 which enables quick charging.

Note: With the MS-1 or ST-2, the TR-3600E can be powered even during charging. It is not possible with BC-2.

A fully charged battery will last for about 110 minutes when used at the rate of 1 minute transmission and 3 minutes reception (squelch ON, Hi Power.).

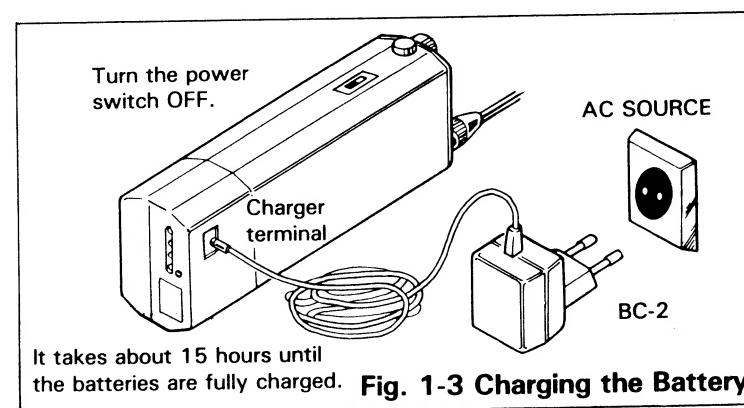
NOTE 1: The PB-26 battery pack is not charged at the factory. Charge the pack before use. If, after purchase or extended storage (more than 2 months) battery capacity is found to be low, the battery needs recharging. Repeating the charge/discharge cycle 2 or 3 times will restore the battery to its full capacity.

NOTE 2: The batteries will charge in 10 to 15 hours, depending on usage. We suggest you establish a charging schedule based on your personal operating habits. You

may need to charge the pack every day, or only every other day. Experiment to determine your needs.

NOTE 3: To help you obtain long life from the battery pack, do not always keep the cells "topped", or fully charged. They will develop what is known as a "memory". When you do not exercise NiCad's through normal charge-discharge cycles, they will not perform when needed. They will drain sooner, and may not recharge after heavy use. To insure good operation, EXERCISE the batteries.

NOTE 4: Use low power to obtain maximum operating time.



Charger Note: LED indicates charger is delivery current to the battery pack. It does not indicate full charge. Disconnect after 15 hours charging time.

CAUTION: This is a **Charge** terminal only. Do not direct wire this terminal to an external power supply.

NOTE: Battery Charge Time: Batteries will charge within 10 to 15 hours. That is, the radio is supplied with a 450mAh pack. Rule of thumb is charge at 1/10 the pack rating, for approximately 14 hours. Light discharge will require a shorter charge time.

CAUTION: When the batteries have been fully charged, do not attempt to continue charging. The batteries should be charged at temperatures of 0°C ~ 45°C.

6. MEMORY BACK-UP

The TR-3600E includes a lithium back-up battery to retain memory in the microprocessor. When changing batteries, or if the Ni-Cd batteries should fully discharge, memory will always be retained. Back-up battery life is estimated at about 5 years.

7. MICROPROCESSOR RESET

If the display should, for some reason, display invalid numbers, simply reset the microprocessor. Momentarily press the reset microswitch accessible through the rear case. (All memories are erased in this case.) This may indicate the lithium battery needs replacement. This should be performed by an authorized KENWOOD service facility—either a KENWOOD dealer, or the factory.

8. LCD displays UL

When the Nickel Cadmium batteries or the lithium battery discharge, the letters UL are displayed on the LCD to show that transmitting and receiving are inhibited. To restore operation, charge the NiCad batteries with the supplied AC charger. When the lithium battery (for microprocessor back up) wears out, have it replaced.

Section 2 CONTROLS AND TERMINALS

DCS switch

Set to ON (■) when operating the DCS (digital code squelch) system. In normal QSO operation, set it to OFF (■).

C.AL/R switch

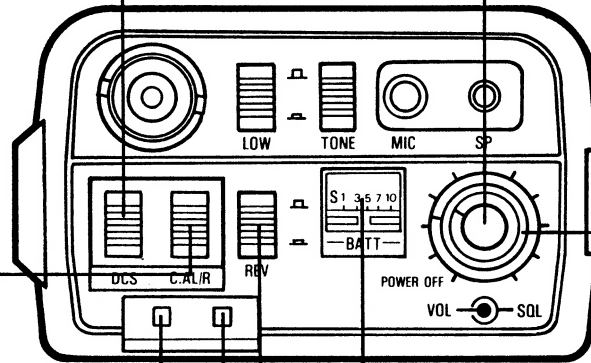
Used to restore the squelch opened by DCS (CALL indicator lights orange). When used DCS, the CALL indicator goes off.

DCS CALL indicator

Lights when the proper DCS code is received.

TX/BUSY indicator

Green when squelch is open. Red when transmitting.



Power Switch and Volume Control

Volume control with Power ON/OFF switch. Power is turned off at the full counter-clockwise position.

SQL control

Used to silence receive noise at no signal condition. Adjust clockwise until the noise threshold is reached when no signal is present. For scan operation (memory scan, programmable scan, auto scan), alert operation, or DCS operation, this control must be set to the threshold point.

S meter

Battery indicator (in transmission). While the batteries maintain adequate operating voltage, the meter indicates in the green.

REV Switch

This push switch is used to check the repeater input before switching to simplex operation by interchanging the receive and transmit frequencies. The REV annunciator will light on the LCD.

Antenna Connector

Connect the supplied rubber-flex antenna with the BNC connector.

HI/LOW Switch

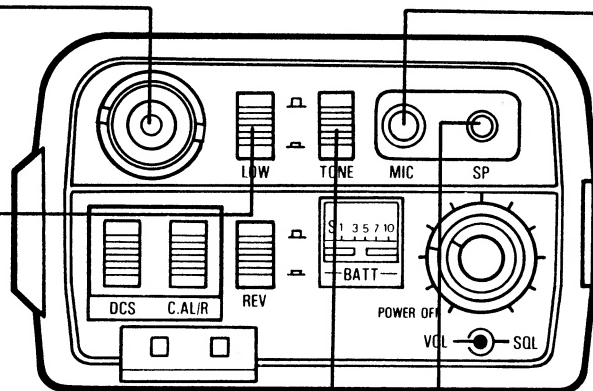
This switch is used to set transmit output power to either 1.5 W (high) or 300 mW (low). Power is high at the normal out position (■), and is low at the in position (■).

TONE switch

This switch is used to transmit a TONE signal. When this switch is pressed, the repeater control tone-signal (1750 Hz) circuit is activated, and the transceiver is set in the transmit mode.

SP Jack

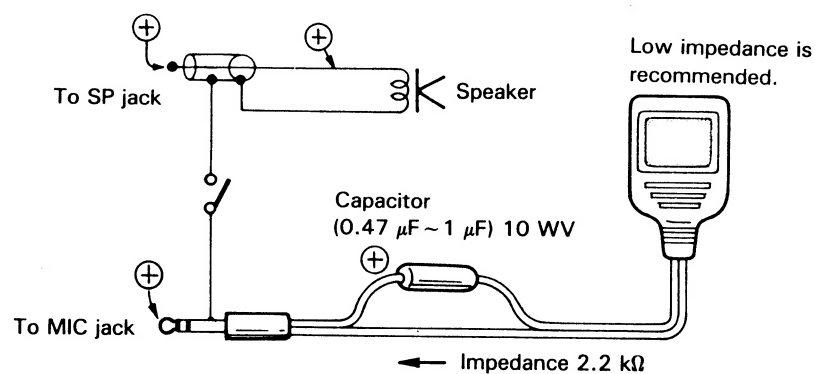
To connect an earphone, external speaker, SMC-30 SPEAKER/MIC or HMC-1.



MIC Jack

NOTE: For direct connection of a condenser microphone. Input impedance is 2.2 k Ω and DC output is 4 V.

When a dynamic microphone is used, connect through a capacitor (0.47 μ F ~ 1 μ F) to block DC voltage.



PRIO. CH/- 1	M 2	+ 3	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS STEP ▲ #	CODE MS SHIFT. W

KEYBOARD

See page 14.

Microphone

An electret condenser mic. Recommended distance to the mic. is 4 ~ 10 cm.

Speaker

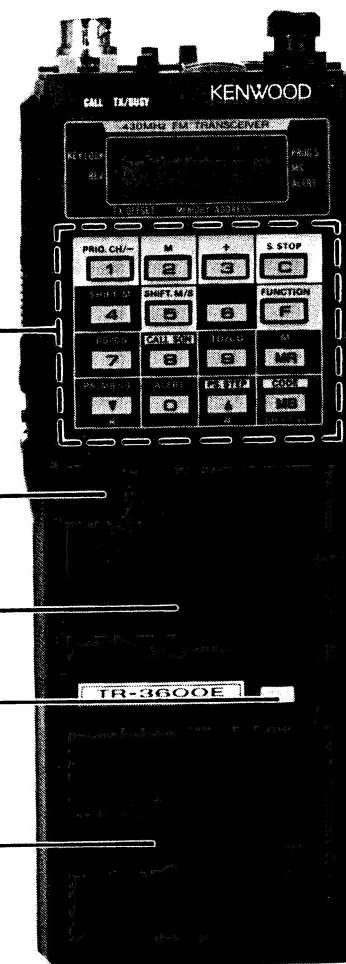
Miniature speaker for personal listening.

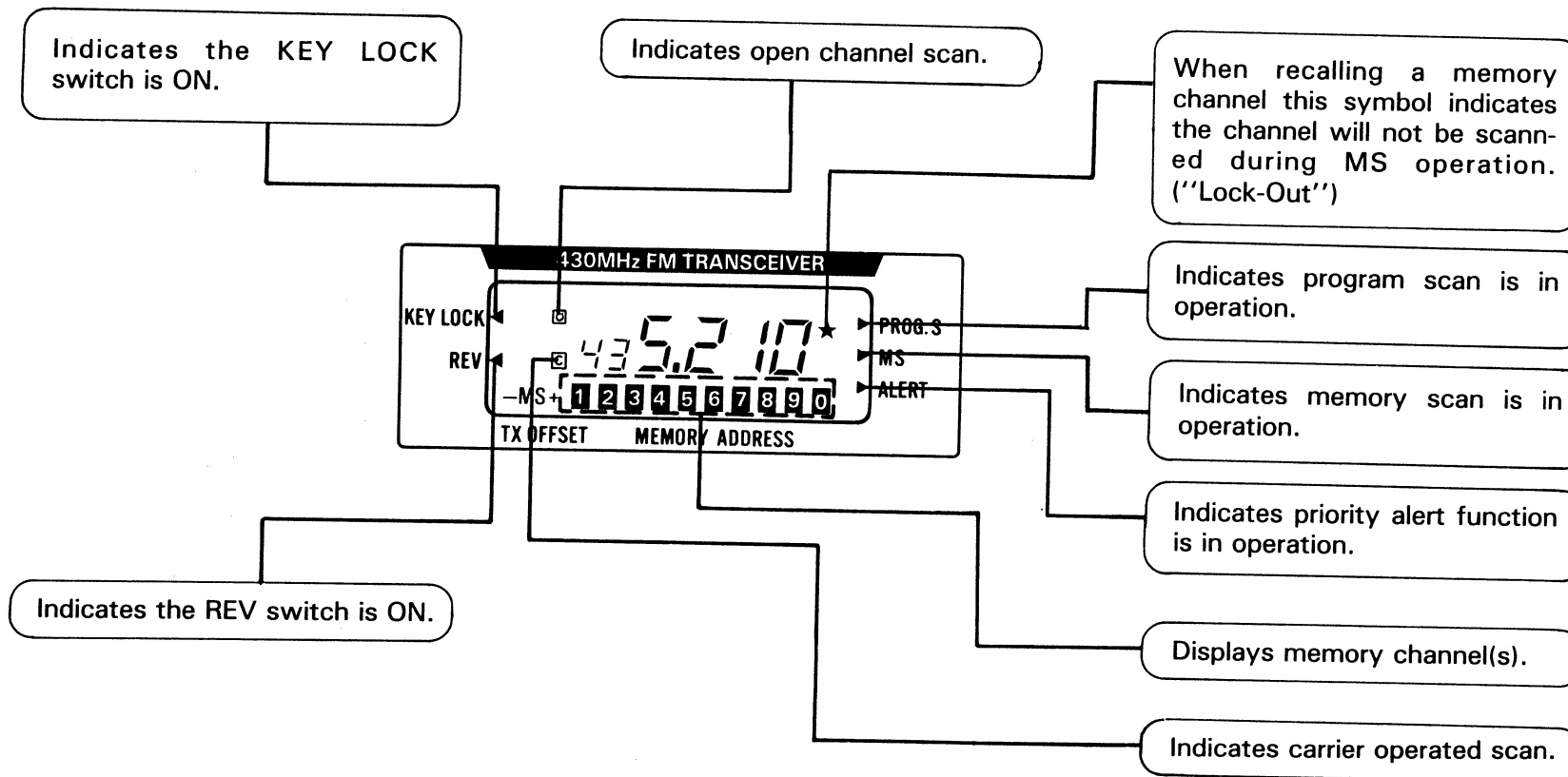
RELEASE Button

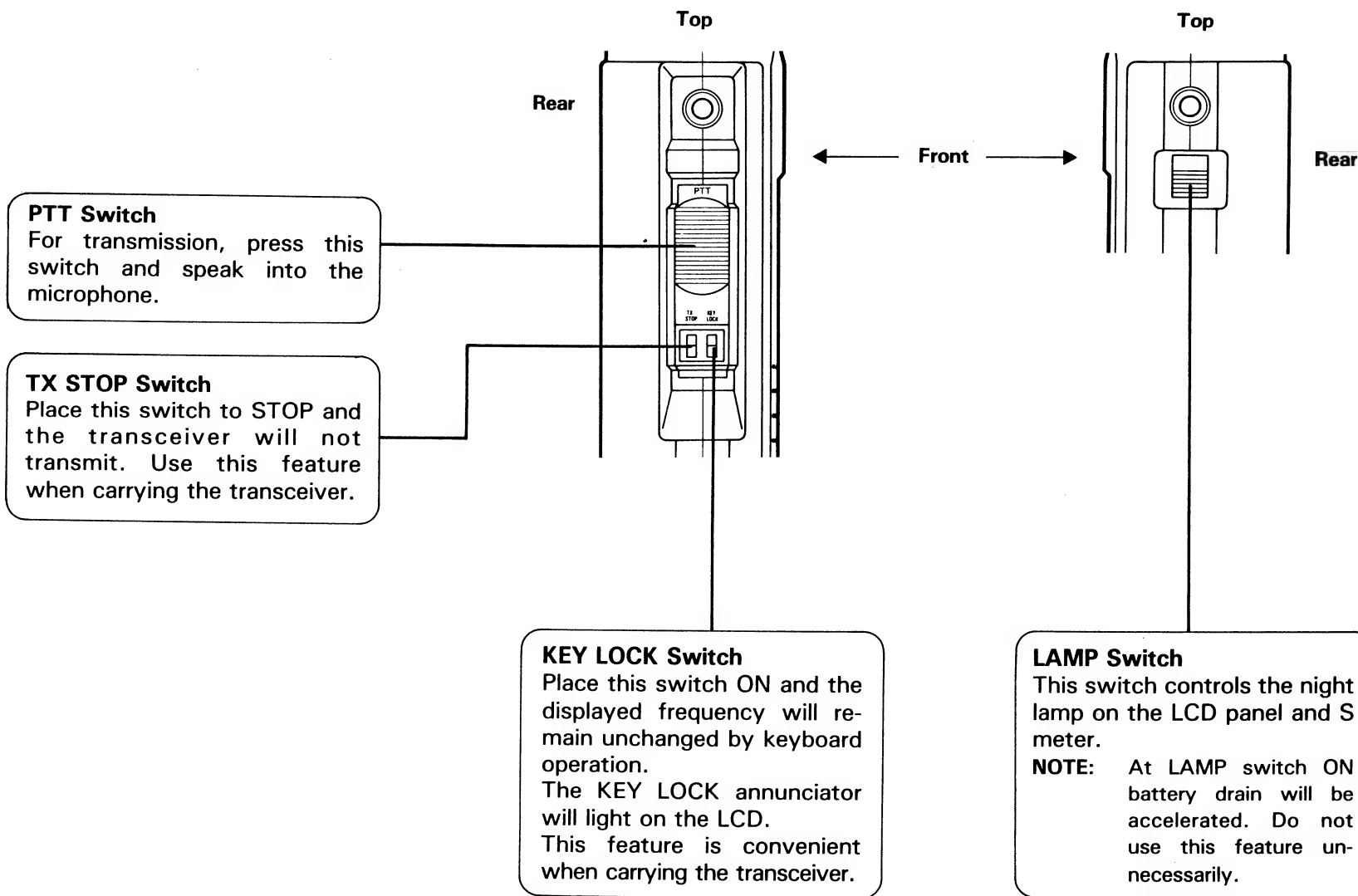
Used to release the battery case for removal. Depress this button, and slide the battery case to the left.

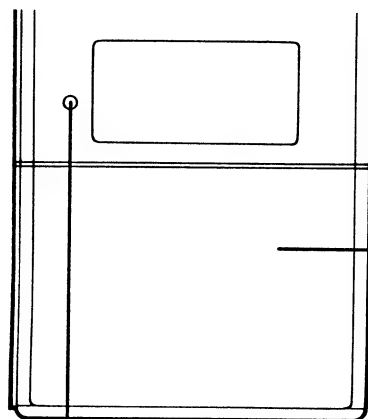
Battery Case

Contains 6 manganese batteries. Refer to page 4.



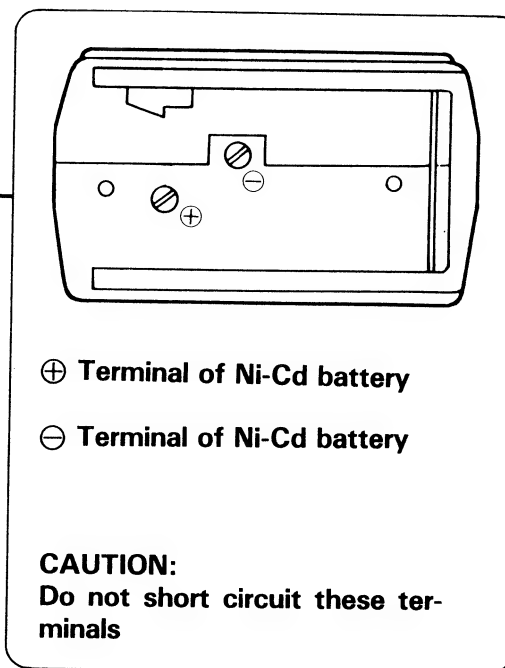






Reset Switch

Used to reset the microcomputer when replacing the backup lithium battery, and during call sign entry.



Section 3 DCS

3.1 DCS

The new DCS system gives the operator the ability to select which stations he wants to listen to. Only those stations that transmit the proper data will be able to "OPEN" the squelch of the TR-3600E, when the DCS system is activated.

A short burst of ASCII data, at the beginning and end of each transmission, contains the necessary information for proper DCS system operation. Both a 5 digit access code and call sign data are contained in this data string.

3.2 DCS OPERATION

1) CALL SIGN ENTRY

For proper operation of the DCS system you must first enter a 6 digit call sign into memory. Call signs that contain less than 6 digits must use spaces to fill remaining positions.

A : 65	B : 66	C : 67	D : 68
E : 69	F : 70	G : 71	H : 72
I : 73	J : 74	K : 75	L : 76
M : 77	N : 78	O : 79	P : 80
Q : 81	R : 82	S : 83	T : 84
U : 85	V : 86	W : 87	X : 88
Y : 89	Z : 90	Space : 32	
0 : 48	1 : 49	2 : 50	3 : 51
4 : 52	5 : 53	6 : 54	7 : 55
8 : 56	9 : 57		

Fig. 3-1 Decimal ASCII code table

Example 1: Call sign WD6DJY

- Turn on power.
- Set DCS switch to ON (■)
- As shown in the figure below, insert a small nonmetallic rod through the opening in the rear case and press the RESET switch.

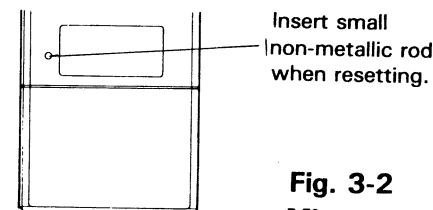


Fig. 3-2
Microcomputer Resetting

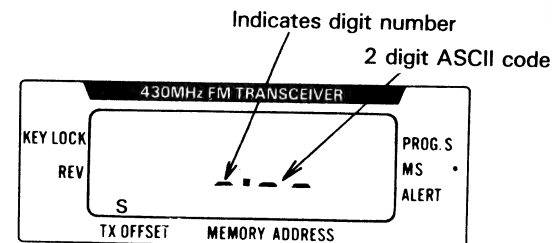


Fig. 3-3

NOTE: All memories will be erased.

The display will show Fig. 3-3.

Using Fig. 3-1 translate each number and letter into a 2 digit numeric code. W=87, D=68, 6=54, D=68, J=74, Y=89.

D) To enter the call sign press the following keys in the indicated order; **[8] [7] [6] [8] [5] [4] [6] [8] [7] [4] [8] [9]**.

NOTE: A "beep" will sound on the second digit of each 2 digit code. A string of beeps will sound after the last digit (9 in this case) has been entered, and the display will show ...

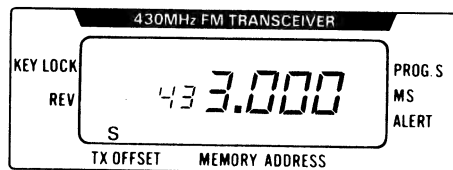


Fig. 3-4

- E) If you should make an error during entry, repeat steps C and D.
- F) A call sign once entered can only be erased by resetting, or by low memory backup voltage (dead lithium battery).

Example 2: Call sign KR6T

A-C) Same as Example 1.

D) Enter a Space (32) at the beginning, then enter the call sign followed by another space; **[3] [2] [7] [5] [8] [2] [5] [4] [8] [4] [3] [2]**.

NOTE: Spaces may be entered in any position. The only requirement for proper operation is that you enter six, 2 digit characters.

2) CALL SIGN CONFIRMATION

- A) Set the DCS switch to ON (■).
- B) Press **[F]** and then the **[8]** key.
- C) Press the **[▲]** key twice to display the first ASCII code character. The display will show ...

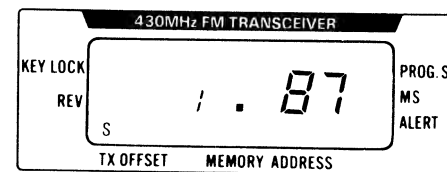


Fig. 3-5

- D) Repeat step 2C until the last digit of the callsign has been displayed. The display will then return to the frequency display.

NOTE: Transmit and Receive are disabled during this procedure.

3) DIGITAL ACCESS CODE ENTRY

- A) Set the DCS switch to ON (■).
- B) Press the **[MS]** key. The digital display will show ...

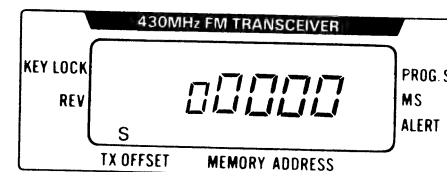


Fig. 3-6

- C) To store digital code 12345 for example, press the keys in order.
- D) Press the key to advance to code memory number 2. Repeat step C to store the second code. (Any 5 digit number)
- E) Repeat step D to store the final code memory.
- F) To change the codes later, simply repeat steps A-E.
- G) To return to the normal frequency display press .

4) ACCESS CODE SELECTION

- A) Set the DCS switch ON. (■).
- B) Press the key. The display will show ...

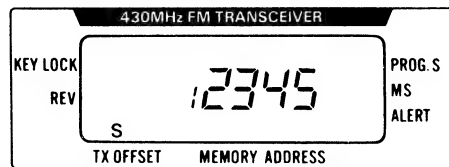


Fig. 3-7

- C) To move to the next code press . You may step thru the 3 different codes by pressing .
- D) To return to the normal frequency display press .

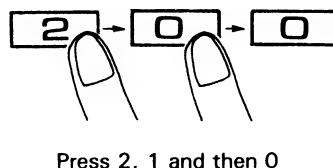
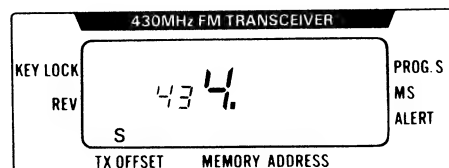
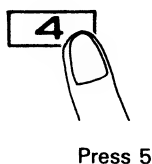
Section 4 KEY BOARD OPERATION

4.1 KEY BOARDS FUNCTIONS

Operation	Key(s) used	Manipulaiton
Frequency setting	[1] ~ [0]	Press 1 ~ 0 keys.
5 kHz step frequency shift	[▲] or [▼]	Press required key momentarily.
5 kHz setp scan initiation	[▲] or [▼]	Keep required key pressed for more than one second and remove your finger.
5 kHz step quick frequency shift	[▲] or [▼]	Keep required key pressed until the operation required.
Storing displayed frequency	[F], [MR], [1] ~ [0]	Press F and MR keys, then specify memory channel by 1 ~ 0 keys.
Memory CH recall	[MR], [1] ~ [0]	Press MR key and specify CH by 1 ~ 0 keys.
Memory CH erasure	[F], [MR], [F], [1] ~ [0]	Press F, MR and F keys and specify CH by 1 ~ 0 keys.
Locking out memory CH from scan	[MS] + [1] ~ [0]	Specify memory CH by 1 ~ 0 keys with MS key kept pressed.
Releasing locked out memory CH	[MS] + [1] ~ [0]	Specify locked out CH by 1 ~ 0 keys with MS key kept pressed.
Memory scan initiation	[MS]	Press MS key (DCS switch OFF).
Shift width	Set the Shift. [F], [MS]	
Busy/Open CH scan setting	[F], [7] (Display → [0])	Press F and 7 keys. Repeat operation switches the setting alternately.
Time/Carrier scan setting	[F], [9] (Display → [C])	Press F and 9 keys. Repeat operation switches the setting alternately.
Programmable scan step frequency setting	[MR], [8], [▲], [F], [▲]	Press the MR and 8 keys to recall the frequency stored in M8 and press ▲ key to set to the first step frequency. Then press F and ▲ keys.
Programmable scan initiation	[F], [▼]	Press F and ▼ keys.
Stop scan operation	[C]	Press C key.
Storing digital code	[DCS] ON, [MS], [1] ~ [0]	Set DCS switch to ON. Press MS key and make 5-digit code by 1 ~ 0 keys.
Recalling digital code	[DCS] ON, [MS]	Set DCS switch to ON. Press MS key periodically until desired code is displayed.
Switching display from digital code to frequency	[C]	Press C key.
Recalling stored call sign	[DCS] ON, [F], [8], [▲]	Set DCS switch to ON. Repeat-press F, 8 and ▲ keys 12 times.
Setting alert function	[F], [0]	Press F and 0 Keys.
Releasing alert function setting	[F], [0]	Press F and 0 keys.
TX OFFSET setting	[F] ([1], [2], [3], [5])	Press F and the desired TX OFFSET key.

4.2 FREQUENCY SELECTION

PRIO.CH/- 1	M 2	+	S.STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS.STEP ▲ #	CODE MS SHIFT. W



The TR-3600E incorporates a receiver capable of tuning from 430.000 thru 439.995 MHz, therefore a 4 digit system of entering the desired frequency is used.

For example, to select a frequency of 434.200 MHz, depress the following keys in order; **4 2 0 0**. The display will indicate 434.200.

If you should make an error before entering all 4 digits, press the **C** key. This will return the display to its previous frequency and you may then reenter the desired frequency.

If you make an error after all 4 digits have been entered, simply start over and reenter all 4 digits.

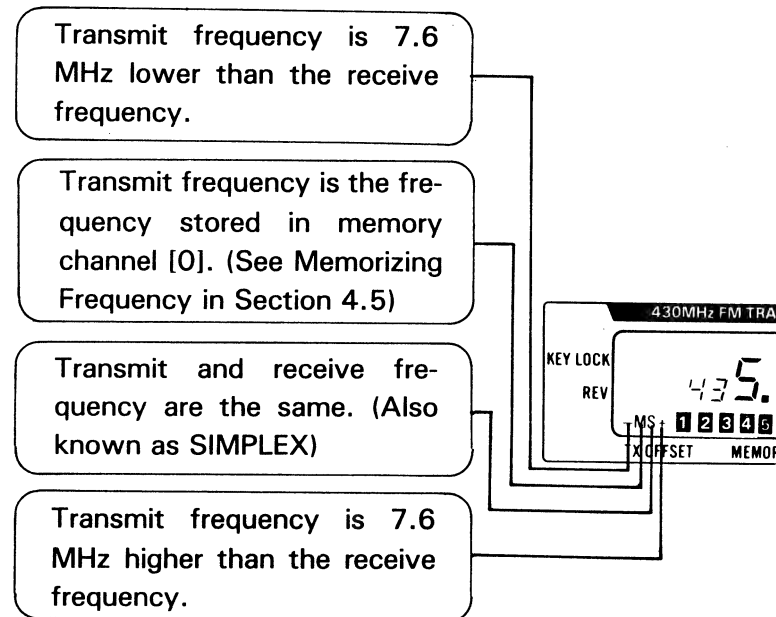
NOTE: The receiver will not change frequency until all 4 digits have been entered. To avoid possible confusion, always check the display to visually confirm that the proper frequency is displayed.

4.3 REPEATER OFFSETS

The normal effective range of UHF transceivers, such as the TR-3600E, can be increased thru the use of repeaters. Repeaters are normally stationed as high as possible, to allow the widest possible coverage, and use a different frequency for transmit and receive. The normal difference, or "OFFSET" is plus (+) or minus (−) 7.6 MHz but there are also a few repeaters that use an offset other than this standard. This "ODDSPLIT" may be any two frequencies.

1) OFFSET SELECTION

Four different offset selections are available:



- A) Enter the desired receive frequency into the display.
- B) Press the **[F]** and then the desired offset key. For example, to enter a +7.6MHz offset press **[F]** **[3]**, and the display will show ...

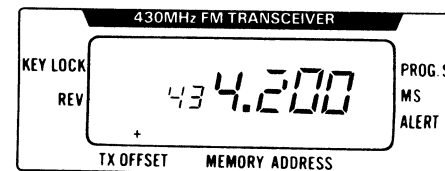
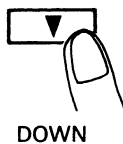
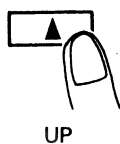
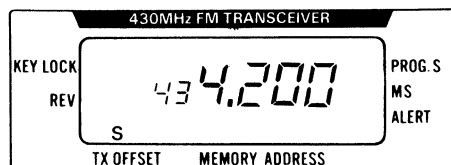


Fig. 4-3-1

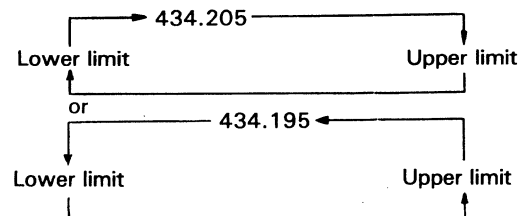
4.4 5 kHz STEP SHIFT

PRIO. CH/ - 1	M 2	+ 3	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) * ▼	ALERT 0	PS STEP #	CODE MS SHIFT. W



- 1) Pressing either the or the key momentarily will cause the displayed frequency to change 5 kHz up or down, respectively.

Repeating this operation shifts the displayed frequency as shown below.



2) 5 kHz SCAN

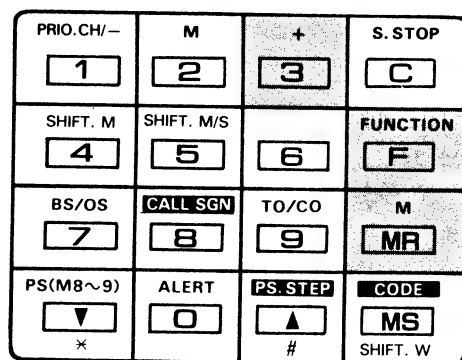
- A) Pressing the or the key for more than one second will cause the radio to scan in 5 kHz steps, in the corresponding direction. If a signal is received during scan, the scan will stop for 5 seconds and then resume.
- B) To stop scan either press the opposite arrow key, or press the PTT bar.

NOTE: The 5 kHz scan function, scans the entire range of the radio, and is independent of the program Scan range settings.

3) 5 kHz STEP RAPID SCAN

Keeping the or the keys depressed causes the set to rapidly shift frequency in the respective direction. When the key is released the set will revert to the 5 kHz Scan mode.

4.5 ENTERING A FREQUENCY INTO MEMORY



Press 1 ~ 0

- 1) Enter the desired frequency and offset, see 4.2 and 4.3 above.
- 2) To enter the frequency and offset into memory press **[F]**, **[MR]** and the desired channel number **[1]** ~ **[0]**.

For example; store 434.200 MHz with a +7.6 MHz offset into memory channel 3.

- A) Press **[4]** **[2]** **[0]** **[0]** **[F]** **[3]** and the display will show as in Fig. 4-5-1.

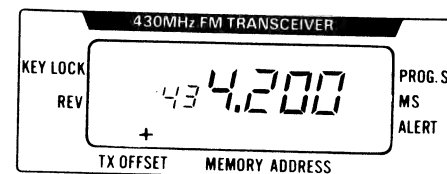


Fig. 4-5-1

- B) Press **[F]** **[MR]**. Memory channels with data already entered will appear in the display. In this example we will assume that no memories currently have data.
- C) Press **[3]** to store the frequency and offset in channel 3. A beep will sound to confirm entry, and the display will show ...

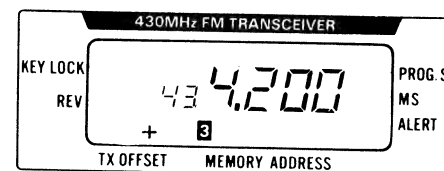


Fig. 4-5-2

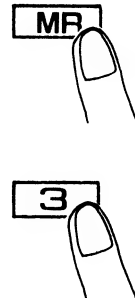
- D) Repeat steps A-C for the remaining channels, if desired.

NOTE: Memory channel 0 is used to store the transmit frequency for an "ODDSPLIT" repeater, and is used in conjunction with the "M" offset key.

NOTE: You may enter data into an occupied channel, but the data previously stored there will be erased, when the new data is stored.

4.6 RECALLING A MEMORY CHANNEL

PRIO.CH/- 1	M 2	+	S.STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS.STEP ▲ #	CODE MS SHIFT. W



- 1) To recall a frequency from memory, press **MR**. The display will show ...

NOTE: The display below shows that memory channels **4**, **6** and **9** are vacant.

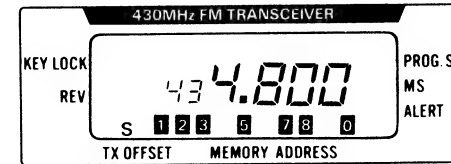


Fig. 4-6-1

- 2) Press the desired channel key, such as **3** and the display will show ...

NOTE: If the lockout indicator appears, as shown, the memory channel displayed will not be scanned during **MS** MEMORY SCAN operation. See sections 4.11 for further information on this feature.

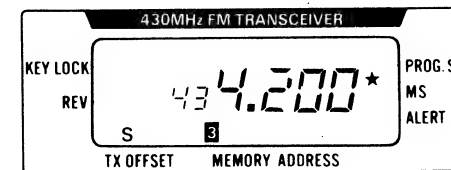
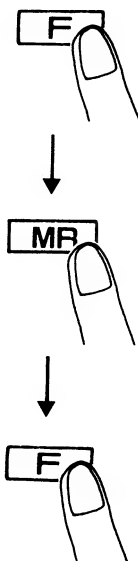


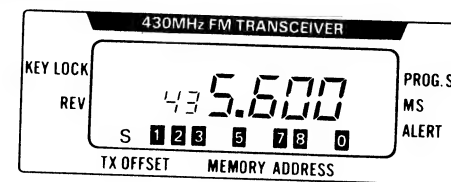
Fig. 4-6-2

4.7 CLEARING A MEMORY CHANNEL

PRIO. CH/- 1	M 2	+	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS STEP ▲ #	CODE MS SHIFT. W



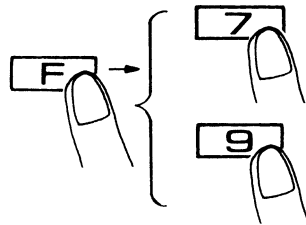
- 1) Press **F** and then the **MR** key. The display will indicate any memory channels that contain data.
For example:



- 2) Press **F** **MR** **F** and the channel number of the memory channel you want to clear. A beep will sound to signal the channel has been erased, the display will show the channel number of the cleared channel and the frequency will be 433.000 MHz, the default value.

4.8 SCANNING

PRIO. CH/— 1	M 2	+ 3	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS. STEP ▲ #	CODE MS SHIFT. W



1) The TR-3600E has two types of scan-stop functions.

- A) Busy-stop: Scan will stop on a busy channel.
- B) Open-stop: Scan will stop on an unoccupied channel.

2) The TR-3600E also incorporates two types of scan resume.

A) Time operated: Scan will resume 5 seconds after it stops, even if a carrier is still present, or has already dropped out.

B) Carrier operated: In the busy stop mode, the radio will resume scanning when the carrier drops out. In the open scan mode, the set will resume scan when a signal appears.

3) The desired stop and resume scan functions may be selected as follows.

NOTE: Initial settings are for Busy-stop and Time operated resume.

A) Pressing **[F]** and then **[7]** will toggle the **[C]** annunciator on and off. When the annunciator is "ON" the TR-3600E is in the Open-stop mode. When an annunciator is "OFF" the set is in the Busy-stop mode.

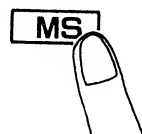
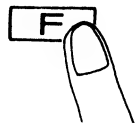
B) Pressing **[F]** and then **[9]** toggles the **[M]** annunciator. When the annunciator is "ON" the radio is in the Carrier operated resume mode. When it is "OFF" the radio is in the Time operated resume mode.

4) These functions control the MEMORY SCAN, PROGRAM SCAN and the 5 kHz SCAN modes, and allow a great amount of flexibility.

For example, to check for local activity, a combination of busy stop and time operated scan may prove useful.

4.9 SHIFT WIDTH

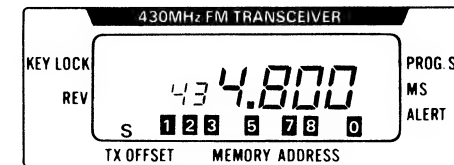
PRIO.CH/- 1	M 2	+	S.STOP C
4	S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS.STEP ▲ #	CODE MS



Display the off-set frequency in the frequency display by pressing one of **1** – **5** keys. The off-set frequency can be preset from 5 kHz to 9.995 MHz at intervals of 5 kHz. The normal off-set frequency is 7.6 MHz and this off-set frequency is obtained when the power is initially turned on. When an off-set frequency other than 7.6 MHz is preset, store the operation frequency in memory channel 4 or 5. Repeater operation with the specified off-set frequency is possible by recalling memory channel 4 or 5 even when the off-set frequency is returned to 7.6 MHz.

4.10 MEMORY SCAN

PRIO.CH/- 1	M 2	+	S.STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ ×	ALERT 0	PS.STEP ▲ #	CODE MS SHIFT. W

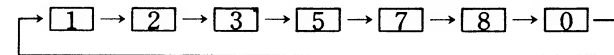


1) The above figure is the current frequency display.

Current memory channels are: 1 2 3 5 7 8 and 0

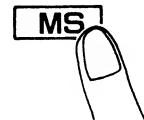
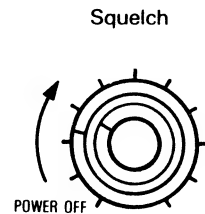
For scan to operate properly, adjust the SQUELCH control clockwise to silence noise, and ensure that the DCS switch is "OFF".

Pressing the **MS** key will start a sequential scan of the memory channels as shown below.

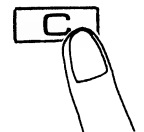


2) To stop the scan at the desired channel either press **C** or press the PTT switch.

3) To resume scan, press the **MS** key again.



Start the scan



Stop the scan

4.11 MEMORY CHANNEL LOCK OUT

PRIO. CH/- 1	M 2	+	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ X	ALERT 0	PS. STEP ▲ #	CODE MS SHIFT. W



This function is useful when you do not want to scan all the memory channels that contain data. This will increase the speed at which the memories are scanned. Memory data in locked-out channels is not erased.

Example: Current memory channels are: 1 2 3 5 7 and 0. We do not wish to scan channels 2 5 and 7.

- 1) Press and hold the **MS** key and then press 2, 5 and 7 in order.
- 2) Release the **MS** key, and the radio will begin scanning the memories. Note that memory channels 2 5 and 7 are not being scanned.

NOTE: When a memory channel has been locked out, it will have a star in the display, whenever that channel is recalled from memory.

- 3) To restore a locked out channel repeat steps 1 and 2. When the **MS** button is released all currently active channels will be scanned.

4.12 PROGRAM SCAN

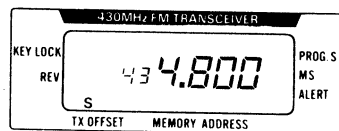
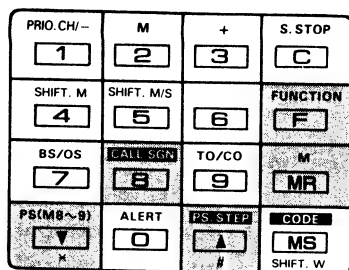
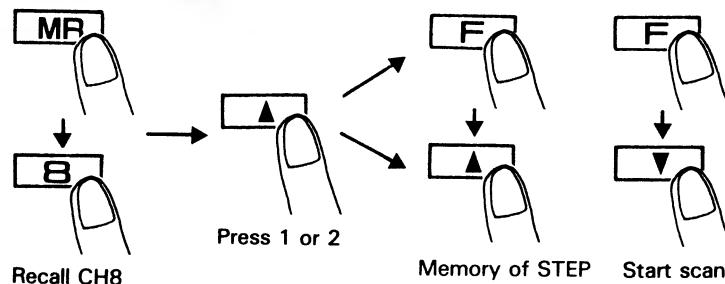


Fig. 4-12-1



Program scan allows you to select which portion of the receivers tuning range you want to scan.

1) SCAN RANGE SELECTION

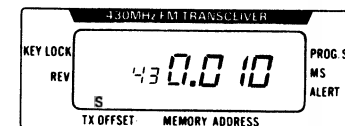
- Store the lower limit in memory channel **8**.
- Store the upper limit in memory channel **9**.

2) SCAN STEP SELECTION

- Press **MR** **8** to recall the lower limit.
- Press the **▲** key to increment the displayed frequency an amount that is equal to the desired step.

For example: We have stored the lower limit as 430.000 MHz and want to scan in 10 kHz steps.

Press **MR** **8** **▲** **▲**. The display will show ...



- Press **F** and **▲** to enter the step size into memory. A series of beeps will sound as long as the **▲** key is depressed to signal that the step size was entered correctly.

3) PROGRAM SCAN INITIATION

Press the **F** and then the **V** keys in order to initiate program scan.

4) STOPPING PROGRAM SCAN

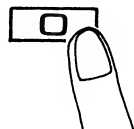
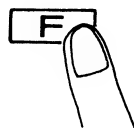
- To stop Program Scan and begin at the same point, at a later time, momentarily press the PTT key and release.
- To stop Program Scan and resume at the lower limit, press **C**.

NOTE: If the step size has not been entered, program scan will not start.

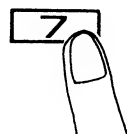
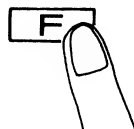
You may change any variable (lower limit, upper limit, or step size) at any time. Just follow the above procedures.

4.13 PRIORITY ALERT

PRIO. CH/- 1	M 2	+	S. STOP C
SHIFT. M 4	SHIFT. M/S 5	6	FUNCTION F
BS/OS 7	CALL SGN 8	TO/CO 9	M MR
PS(M8~9) ▼ *	ALERT 0	PS. STEP ▲ #	CODE MS SHIFT. W



Alert mode



Scan mode

Memory Channel 1 is the priority channel.

- 1) Pressing **F** and then **0** will turn on the ALERT annunciator and activate the ALERT mode.

A) When in alert mode and Busy Stop has been selected the TR-3600E will switch to the Priority Channel [1] once every 8 seconds. If a carrier is present a double beep will sound. If no carrier is present no beep will be heard.

NOTE: The displayed frequency will "Drop Out" during the time frame necessary for the TR-3600E to search the Priority channel.

This will, however, only be a momentary drop out.

B) When in alert mode and Open scan has been selected, the double beep will sound approximately once every 6 seconds if no carrier is present on the alert channel. If a carrier does exist no beep will sound.

- 2) To clear the alert mode, press **F** and then **0** keys. The alert annunciator will turn off.

Section 5 OPERATION

5.1 RECEIVE

1. Turn the power switch ON.
2. Turn the squelch control clockwise until the background noise just turns off. This point is known as the "Squelch Threshold".
3. Adjust the VOL control clockwise for the desired listening level.
4. Select the desired channel or frequency by using the procedures outlined in Section 4.

5.2 TRANSMIT

1. Select the desired channel or frequency.
2. Select the desired TX offset.
3. Select either Low Power (300 mW) or High Power (1.5 W).
4. Press the PTT switch and speak into the microphone. The ON AIR indicator will light red. For best results the recommended distance to the microphone is 5-10 cm (2-4 inch).

5.3 DCS OPERATION

1. Turn on the DCS switch. (■)
2. Select the desired DCS access code. Both stations must be on the same code, so you must coordinate before activating the DCS system.
3. Press the C.AL/R button to "ARM" the DCS system. The TR-3600E will now remain squelched until the proper DCS code signal is received, or the DCS switch is turned off.

When the proper code is received the CALL lamp will turn on, a double beep will be heard from the speaker, the squelch will open, and the busy indicator will function normally. In other words it will not be necessary for the transmitting station to have the proper DCS code after the TR-3600E has opened squelch.

Once the proper code has been received it will be necessary to "REARM" the DCS system with the C.AL/R switch to again activate the selective call function, if desired.

To open the squelch of a distant station with DCS all you will have to do is transmit, with the DCS switch on. if you transmit the proper access code the distant station will open squelch, and normal communications can be carried out.

After the squelch of both stations has been opened, turn the DCS switch OFF.

5.4 REPEATER OPERATION

Depress the tone switch and the repeater station is operated by 1750 Hz modulation signal.

Section 6 ADDITIONAL INFORMATION

GENERAL INFORMATION

Your TR-3600E has been factory aligned and tested to specifications before shipment. Under normal circumstances, the transceiver will operate in accordance with these operating instructions. If your transceiver fails to work, contact the Authorized KENWOOD Dealer from whom you purchased it for quick, reliable repair. All adjustable trimmers and coils in your transceiver were preset at the factory and should only be readjusted by a qualified technician with proper test equipment.

Attempting service or alignment without factory authorization can void the transceiver's warranty.

ORDERING SPARE PARTS

When ordering replacement or spare parts for your equipment, be sure to specify the following:

Model and serial number of your transceiver, schematic number of the part, printed-circuit-board number on which the part is located, part number and name, if known, and quantity desired.

NOTE: A full Service Manual is available as a separate publication.

SERVICE

Should it ever become necessary to return the equipment for repair, pack in its original box and packing, and include.

1. Model and Serial number of the equipment.
2. A full, detailed description of the problems involved.
3. When claiming warranty service, please include a photocopy of the bill of sale, or other proof of purchase showing the date of sale.

You need not return accessory items unless they are directly related to the service problem.

OPTIONAL ACCESSORIES

1. ST-2 Base Stand

- Built-in quick charger about 1.5 hours with full charge indicator.
- Full operation while charging.
Separate Battery Trickle charge and power feed for extended base operation.
- Drop-in connections.

2. MS-1 Mobile Stand

- Cigar Plug for instant connection.
- Full operation while charging (trickle charge only)
Separate power feed for extended operation.
Built-in illumination for keyboard.
- Drop-in connections.

3. PB-26 Ni-Cd Battery Pack

4. SMC-30 Speaker Microphone

5. HMC-1 Headset with vox

6. SC-9 Soft Case with Belt Hook

7. CD-10 Call sign display

8. DC-26 DC-DC Converter

9. EB-3 External Battery Case For "C" Cells

10. BC-2 AC Charger

11. VB-2530 RF POWER Amplifier

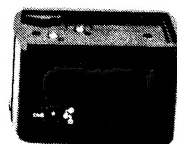
If desired, cut off this part and carry it with you for operation aid.

Operation	Key(s) used	Manipulation
Frequency setting	[1] - [0]	Press 1 - 0 keys.
5 kHz step frequency shift	[A] or [Y]	Press required key momentarily.
5 kHz step scan initiation	[A] or [Y]	Keep required key pressed for more than one second.
5 kHz step quick frequency shift	[A] or [Y]	Keep required key pressed.
Storing displayed frequency	[F], [MR], [1] - [0]	Press F and MR keys, then specify memory channel by 1 - 0 keys.
Memory CH recall	[MR], [1] - [0]	Press MR key and specify CH by 1 - 0 keys.
Memory CH erasure	[F], [MR], [F], [1] - [0]	Press F, MR and F keys and specify CH by 1 - 0 keys.
Locking out memory CH from scan	[MR] + [1] - [0]	Specify memory CH by 1 - 0 keys with MS key kept pressed.
Releasing locked out memory CH	[MR] + [1] - [0]	Specify locked out CH by 1 - 0 keys with MS key kept pressed.
Memory scan initiation	[MR]	Press MS key (DCS switch OFF).
Shift width	Set the shift. [F], [MR]	
Busy/Open CH scan setting	[F], [Z] (Display - [G])	Press F and 7 keys. Repeated alternately operation switches the setting.
Time/Carrier scan setting	[F], [G] (Display - [G])	Press F and 9 keys. Repeated alternately operation switches the setting.





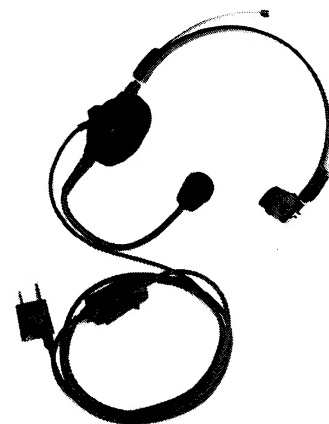
ST-2



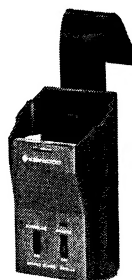
PB-26



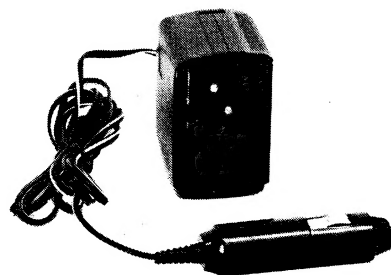
SMC-30



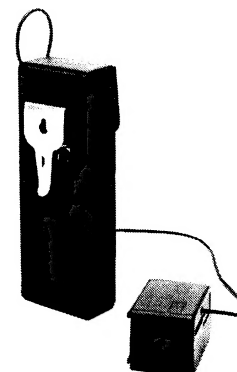
HMC-1



MS-1



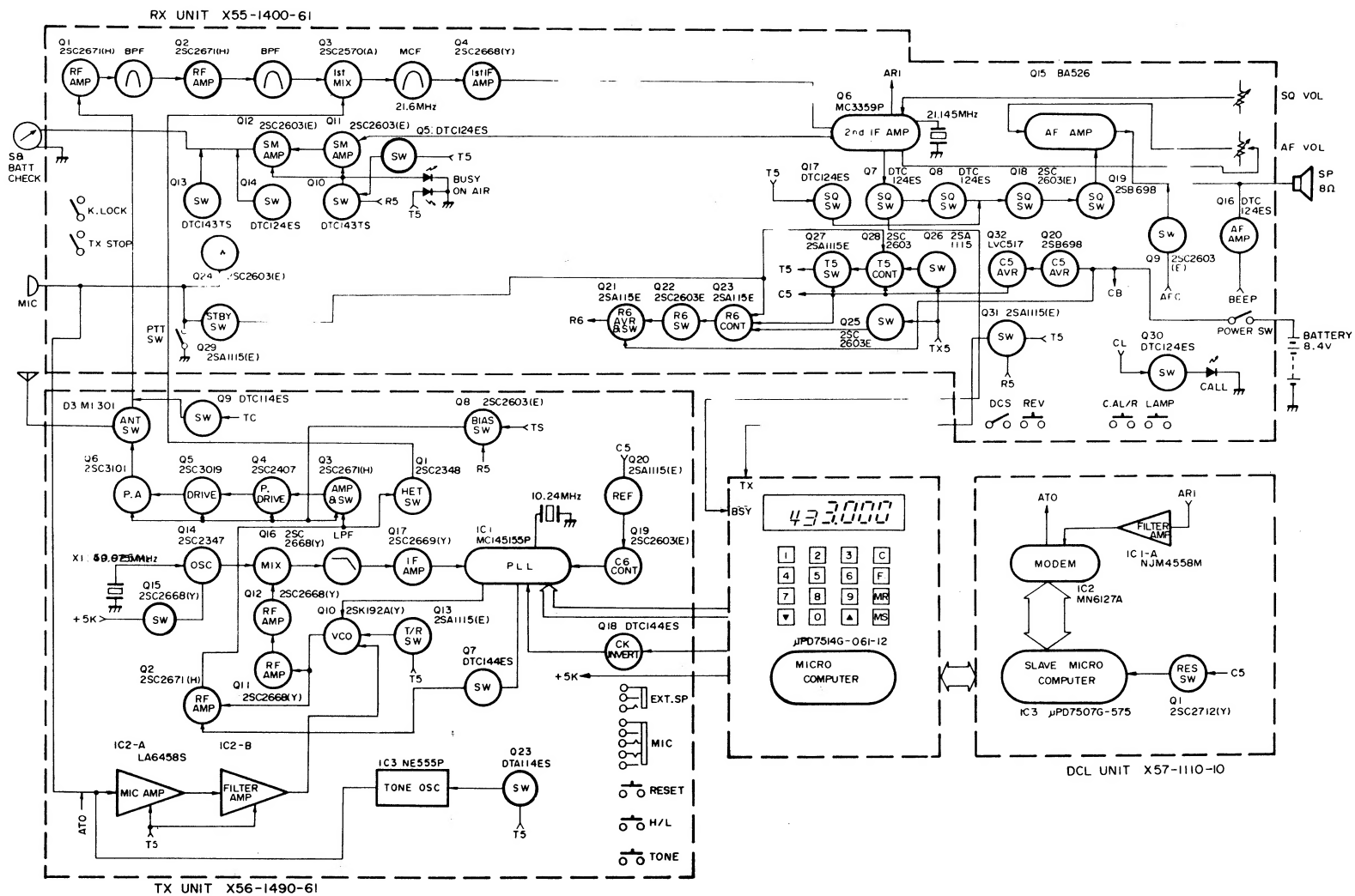
DC-26



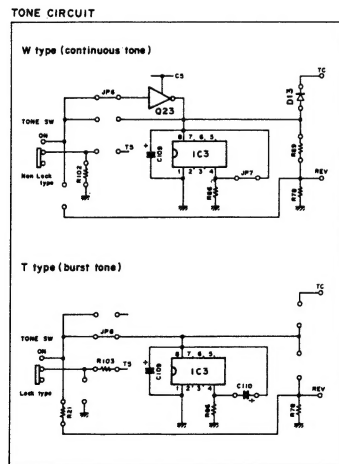
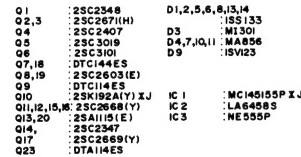
EB-3

Operation	Key(s) used	Manipulation
Programmable scan step frequency setting	[MR], [8], [A], [F], [A]	Press the MR and 8 keys to recall the frequency stored in M8 and press ▲ key to set to the first step frequency. Then press F and ▲ keys.
Programmable scan initiation	[F], [▼]	Press F and ▼ keys.
Stop scan operation	[C]	Press C key.
Storing digital code	[DCS] ON, [MR], [1] ~ [0]	Set DCS switch to ON. Press MS key and make 5-digit code by 1 ~ 0 keys.
Recalling digital code	[DCS] ON, [MR]	Set DCS switch to ON. Press MS key periodically until desired code is displayed.
Switching display from digital code to frequency	[C] or press PTT	Press C key, or key transmit.
Recalling stored call sign	[DCS] ON, [F], [8], [A]	Set DCS switch to ON. Repeat-press F, 8 and ▲ keys 12 times.
Setting alert function	[F], [0]	Press F and 0 keys.
Releasing alert function setting	[F], [0]	Press F and 0 keys.
TX OFFSET setting	[F] ([1], [2], [3], [4], [5])	Press F and the desired TX OFFSET key.

BLOCK DIAGRAM



TR-3600E SCHEMATIC DIAGRAM



TR-3600E (W). (T)